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ABSTRACT

The report is a sequel to an earlier report on doctoral awards to men and women since 1970-71, the focuses on the first and last years of the study, 1970-71 and 1975-76. The increase in women's representation among doctoral degree recipients has been steady over those six years, rising from 14.3 percent to 22.9 percent. While the numbers of degrees awarded to women climbed, the number for men actually decreased during that time. Data are presented for field of study, giving numbers and percentages of women recipients for the two years in question, and giving percentage gains. (MSE)

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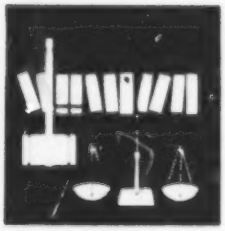

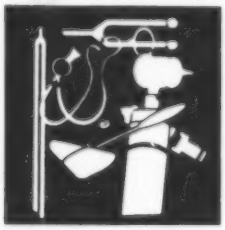

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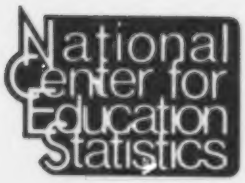

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DOCTORAL DEGREE AWARDS TO WOMEN

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In recent years, sex discrimination in American society has been a much publicized topic. The public's attention has been drawn to the fact that relatively few women are to be found in the highest echelons of government, industry, or the professions.

Although there are many circumstances which contribute to the paucity of women in high-level positions, one possible factor is that few women have attained the educational levels required for such positions. Historically, far fewer women than men have obtained college degrees; the disproportion has been even greater with respect to doctoral degrees. Increasing public concern about this and related issues prompted enactment of title IX of the Education Amendments of 1972, which banned sex discrimination in education. A National Advisory Council on Women's Educational Programs was established by the Education Amendments of 1974 to advise the Commissioner of Education on educational equity for women.

What changes have occurred in the educational attainments of women since the enactment of title IX? A recent NCES publication, Analysis of Doctor's Degrees Awarded to Men and to Women, 1970-71 through 1974-75, revealed that both the absolute number and the percentage of women among doctoral degree recipients increased in each of the 5 years covered by the study. It also revealed, however, that for the most part, the largest increases occurred in traditionally feminine fields, and that the representation of women in male-dominated fields remained quite small.

The present report covers an additional year, 1975-76, focuses solely on the sex of degree recipients, and excludes the analyses by State, region, and control of institution that were included in the earlier report. The material

in the body of the report pertains primarily to the first and last years (i.e., 1970-71 and 1975-76). To enhance readability, an academic year will be referred to by the calendar year in which it ends (e.g., 1971). Precise figures for each of the 6 years are presented in the appendix. All doctoral degrees awarded by U.S. institutions are included except first professional degrees (e.g., in dentistry, medicine, law, etc.).

The data on which this report is based were collected through the annual Survey of Degrees and Other Formal Awards Conferred [part of the Higher Education General Information Survey (HEGIS)].

Overview

The increase in women's representation among doctoral degree recipients has been steady over the last 6 years, from 14.3 percent in 1971 to 22.9 percent in 1976 (7,803 out of 34,076 and 4,579 out of 32,113). In fact, while the numbers of degrees awarded to women climbed, the number awarded to men actually decreased between 1971 and 1976 (from 27,534 to 26,273). In spite of these changes, however, the ratio of awards received by men to those received by women was over 3:1 in 1976.

Field of Study[2/]

Although there has been significant change in the numbers of degrees earned by women, no equivalent change is evident in regard to the fields in which the degrees are earned (see table 1). For the most part, women are staying with the traditionally feminine fields. The discipline divisions on the left side of the following list are those in which women's representation was smallest in 1976; on the right are those in which their representation was highest.

Lowest		Highest	
Engineering	2%	Home economics	71%
Law	4	Foreign languages	48
Theology	4	Library science	45
Business and management	5	Letters	36
Agriculture and natural resources	7	Education	33

2/For detailed information regarding the subfields within each discipline division the following NCES publication should be consulted: Earned Degrees Conferred, 1975-76, Summary Data. This report covers the years 1971-72 through 1975-76. Detailed data for 1970-71 have not been published but can be made available upon request to National Center for Education Statistics (Attention: Dr. George H. Brown) 400 Maryland Ave., S.W., Washington, D.C. 20202.

Table 1. --Percentages of women among doctoral degree recipients, by discipline division: Aggregate United States, 1971 and 1976

Discipline division	1971		1976		Percentage-point gain
	Total doctoral degrees awarded	Percent awarded to women	Total doctoral degrees awarded	Percent awarded to women	
Agriculture and natural resources	1,086	2.9	928	6.6	3.7
Architecture and environmental design	36	8.3	82	15.9	7.6
Area studies	149	17.4	182	31.9	14.5
Biological sciences	3,645	16.3	3,397	21.5	5.2
Business and management	810	2.8	956	5.4	2.6
Communication	145	13.1	204	24.5	11.4
Computer and information sciences	128	2.3	244	9.4	7.1
Education	6,398	21.2	7,769	33.4	12.2
Engineering	3,638	.6	2,821	2.3	1.7
Fine and applied arts	621	22.2	620	27.9	5.7
Foreign languages	781	38.0	864	47.9	9.9
Health professions	466	16.5	577	28.8	12.3
Home economics	123	61.0	178	71.3	10.3
Law	20	.0	76	3.9	3.9
Letters	2,416	23.5	2,452	36.5	13.0
Library science	39	28.2	71	45.1	25.9
Mathematics	1,199	7.8	856	11.0	3.2
Physical sciences	4,391	5.6	3,433	8.7	3.1
Psychology	1,782	24.0	2,581	31.7	7.7
Public affairs and services	178	24.2	319	32.0	7.8
Social sciences	3,659	13.9	4,160	21.6	7.7
Theology	312	1.9	1,033	4.1	2.2
Interdisciplinary studies	91	15.4	273	32.2	16.8
All discipline divisions	32,113	14.3	34,076	22.9	8.6

This concentration of women in traditionally feminine fields was much the same in 1971. In fact, examination of table 1 reveals that women's percentage representation increased most in those areas where they were most heavily represented in 1971:

Women's percentage representation in 1971	Number of disciplines	Average percentage point gain in 1976
Less than 10	9	3.9
10 - 19.9	6	11.3
20 - 29.9	6	12.0
30 or more	2	10.1

It is apparent that women's gains were least in those areas where their initial representation was small (under 10 percent).

The tabulation below, also extracted from table 1, shows the gains made by women in those fields where their representation was lowest in 1971:

Discipline division	Percent women		Percentage point gain
	1971	1976	
Law (not including J.D.)	.0	3.9	3.9
Engineering	.6	2.3	1.7
Theology	1.9	4.1	2.2
Computer and information sciences	2.3	9.4	7.1
Business and management	2.8	5.4	2.6
Agriculture and natural resources	2.9	6.6	3.7

None of the gains was dramatic. The largest, in computer and information sciences, was only 7.1 percentage points.

Clearly, the majority of women are continuing to prepare to enter "women's" fields. For example, in 1976 the only discipline division in which women accounted for more than half (71 percent) of the degree recipients was home economics. It should be pointed out that the total number of doctorates in this field was quite small -- 127 for women and 51 for men. The men concentrated in two subfields: "family relations and child development" and "consumer economics."

The last column in table 1 shows that women's largest gains over 1971 were in library science (25.9 percent), interdisciplinary studies (16.8 percent), area studies (14.5 percent), letters (13.0 percent), health professions (12.3 percent), and education (12.2 percent). It should be noted, however, that women did make at least small gains in all 23 of the discipline divisions.

The preceding discussion has focused on the proportions of women among doctoral degree recipients in each field. Table 2 presents another aspect, the relative popularity of each field among the women receiving degrees. For both of the years under consideration, the same set of six discipline divisions accounted for the preponderance of doctoral degrees awarded to women. These six fields, and their proportions of all doctoral awards received by women, are shown in the tabulation below, extracted from table 2:

	1971	1976
Education	29.6%	33.2%
Letters	12.4	12.3
Social sciences	11.0	11.5
Psychology	9.3	10.5
Biological sciences	13.4	9.4
Foreign languages	6.4	5.3
	82.1%	82.2%

Education, traditionally a female field, accounted for about a third of the awards in 1976, up from 29.6 percent in 1971.

Of the doctoral degrees awarded to men in 1976, 73 percent were accounted for by six fields, indicating that men are somewhat less concentrated than women in a small number of fields. Four discipline divisions -- education, social sciences, letters, and biological sciences -- appeared among the top six fields in both years for both men and women. The other two fields in which men were concentrated in both years -- engineering and physical sciences -- have typically been male-dominated fields.

Table 2. -- Distribution of doctoral degrees by sex and discipline division: Aggregate United States, 1971 and 1976

Discipline division	Percentage of degrees awarded to: Women 1971	Women 1976	Men 1971	Men 1976
Agriculture and natural resources	*	*	3.8	3.5
Architecture and environmental design	*	*	*	*
Area studies	*	*	*	*
Biological sciences	13.0	9.4	11.1	12.9
Business and management	*	*	*	*
Communications	*	*	*	*
Computer and information sciences	*	*	*	*
Education	29.6	33.2	18.3	19.7
Engineering	*	1.0	13.1	10.5
Fine and applied arts	3.0	2.2	1.7	1.7
Foreign languages	6.4	5.3	1.7	1.7
Health professions	1.7	2.1	1.4	1.6
Home economics	1.6	1.6	*	*
Law	.0	.0	*	*
Letters	12.4	12.3	6.7	5.9
Library science	*	*	*	*
Mathematics	2.0	1.2	4.0	2.9
Physical sciences	5.3	3.8	15.0	11.9
Psychology	9.3	10.5	4.9	6.7
Public affairs and services	*	1.3	*	*
Social sciences	11.0	11.5	11.4	12.3
Theology	*	*	1.0	3.8
Interdisciplinary studies	*	1.1	*	*
All discipline divisions	100.0	100.0	100.0	100.0

*Less than 1.0 percent.
NOTE.--Details do not add to 100.0 because of rounding.

APPENDIX

Appendix.—Doctor's degrees awarded, by sex and discipline division:

Discipline division	1970-71			1971-72			1972-73		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
All discipline divisions	32,113	27,534	4,579	33,369	28,095	5,274	34,790	28,575	6,215
Agriculture and natural resources	1,086	1,055	31	971	945	26	1,059	1,031	28
Architecture and environmental design	36	33	3	50	43	7	58	54	4
Area studies	149	123	26	159	130	29	165	117	48
Biological sciences	3,645	3,050	595	3,654	3,032	622	3,637	2,926	711
Business and management	810	787	23	902	882	20	932	879	53
Communications	145	126	19	111	96	15	139	114	25
Computer and information sciences	128	125	3	167	155	12	196	181	15
Education	6,398	5,043	1,355	7,041	5,381	1,660	7,314	5,501	1,813
Engineering	3,638	3,615	23	3,671	3,649	22	3,492	3,438	54
Fine and applied arts	621	483	138	572	428	144	616	449	167
Foreign languages	781	484	297	841	526	315	991	592	399
Health professions	466	389	77	442	362	80	646	485	161
Home economics	123	48	75	104	30	74	165	40	125
Law	20	20	0	40	39	1	37	36	1
Letters	2,416	1,849	567	2,589	1,886	703	2,754	1,925	829
Library science	39	28	11	64	36	28	102	60	42
Mathematics	1,199	1,106	93	1,128	1,039	89	1,068	966	102
Physical sciences	4,391	4,145	246	4,103	3,830	273	4,016	3,742	274
Psychology	1,782	1,355	427	1,881	1,414	467	2,089	1,484	605
Public affairs and services	178	135	43	211	165	46	213	177	42
Social sciences	3,659	3,152	507	4,079	3,481	598	4,230	3,569	661
Theology	312	306	6	441	420	21	666	644	22
Interdisciplinary studies	91	77	14	148	126	22	199	165	34

Aggregate United States, 1970-71 through 1975-76

1973-74			1974-75			1975-76			1970-71 through 1975-76		
Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
33,826	27,374	6,452	34,086	26,819	7,267	34,076	26,273	7,803	202,260	164,670	37,590
930	897	33	991	958	33	928	867	61	5,965	5,753	212
69	65	4	69	58	11	82	69	13	364	322	42
163	118	45	166	128	38	182	124	58	984	740	244
3,440	2,740	700	3,384	2,641	743	3,397	2,666	731	21,157	17,055	4,102
983	933	50	1,011	970	41	956	904	52	5,594	5,355	239
175	146	29	165	119	46	204	154	50	939	755	184
198	189	9	213	199	14	244	221	23	1,146	1,070	76
7,293	5,316	1,977	7,443	5,147	2,296	7,769	5,176	2,593	43,258	31,564	11,694
3,312	3,257	55	3,108	3,042	66	2,821	2,755	66	20,042	19,756	286
585	440	145	649	446	203	620	447	173	3,663	2,693	970
923	520	403	857	455	402	864	450	414	5,257	3,027	2,230
578	447	131	618	441	177	577	411	166	3,327	2,535	792
136	46	90	156	51	105	178	51	127	862	266	596
27	26	1	21	21	0	76	73	3	221	215	6
2,633	1,789	844	2,498	1,648	850	2,452	1,556	896	15,342	10,653	4,689
60	36	24	56	33	23	71	39	32	392	232	160
1,031	931	100	975	865	110	856	762	94	6,257	5,669	588
3,631	3,378	253	3,628	3,326	302	3,433	3,133	300	23,202	21,554	1,648
2,339	1,648	691	2,442	1,688	754	2,581	1,762	819	13,114	9,351	3,763
230	179	51	285	216	69	319	217	102	1,442	1,089	353
4,126	3,382	744	4,209	3,332	877	4,160	3,260	900	24,463	20,176	4,287
768	746	22	872	839	33	1,033	991	42	4,092	3,946	146
196	145	51	270	196	74	273	185	88	1,177	894	283

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